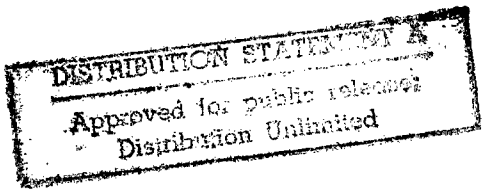
JPRS-TTP-84-027

11 September 1984

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT



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BRIEFS

SATELLITE TRACKING STATION--One of the major links of the Australian national satellite system was officially opened in a Sydney suburb of Belrose today. It is the building which will have satellite tracking, control, and monitoring equipment to be used when the two AUSSAT satellites are launched in the United States next year. The second earth station will be situated in Perth, and there will also be eight communications links known as Major City Earth Stations around Australia. AUSSAT says that when the satellite system is launched next year, the new equipment will provide a comprehensive telecommunications link to even the most remote parts of Australia. [Text] [Melbourne Overseas Service in English 0830 GMT 31 Jul 84 BK]

CSO: 5500/4400

BRIEFS

NEW ZEALAND DEFENSE COMMUNICATIONS--A Canberra-based company has won the contract to replace New Zealand's defense communications system with a network modeled on Australia's new system. The contract is worth $11.5 million--about U.S. $9.5 million. It was signed in Wellington today by New Zealand's secretary for defense, Mr (McClean), and the managing director of Plessey Pacific Defense Systems, Mr (Murph Johnson). The deal provides for the completion by 1990 of what is claimed to be the world's first strategic system for secure digital telephone and information transmission. A similar contract for the first phase of the Australian defense communications network, worth $150 million, was awarded to Plessey Pacific earlier this year. Australia's defense minister, Mr Scholes, said today that with essentially identical defense communications network there could be a range of detailed agreements for systems management and cooperation between Australia and New Zealand. [Text] [Melbourne Overseas Service in English 0830 GMT 10 Jul 84 BK]

CSO: 5500/4402

XINHUA PROFILES POSTS, TELECOMMUNICATIONS GAINS

OW200919 Beijing XINHUA in English 0858 GMT 20 Aug 84

["Posts and Telecommunications in China -- Twelfth of the National Day Focus Series" -- XINHUA headline]

[Text] Beijing, August 20 (XINHUA) -- China is building another 14 posts and telecommunications centers and five ground satellite stations, according to the Chinese Ministry of Posts and Telecommunications.

Upon completion, the 53 posts and telecommunications centers and eight ground stations will form a complete posts and communication network centered around Beijing.

By the end of 1983, China had 4.7 million kilometers of mail delivery routes, 6.7 times the 1949 figure, and more than 2.6 million telephone lines at exchanges in cities, eight times the 1949 figure.

The 40,000 post and telegraph offices in China, linking 95 percent of the country's townships, handle an average of 470,000 telegrams and 830,000 long distance calls a day.

The country's 13.3-kilometer, 120-channel, optical fiber, communication project was incorporated into the public network in Wuhan, capital of Hubei Province, last year and another long-wave length, 480-channel optical fiber system has already been put into trial operation in Tianjin, a major industrial city in north China this year.

In 1976, China's first 1,800-channel coaxial cable carrier came into being linking Beijing, Shanghai and Hangzhou, capital of Zhejiang Province in east China. It passes through eight provinces and municipalities. Meanwhile a 14,000-kilometer-long microwave circuit was also completed linking 26 provinces, municipalities and autonomous regions. The second 1,800-channel coaxial cable is being built from Beijing, via Wuhan to Guangzhou, capital of Guangdong Province. It is scheduled to complete next year.

From 1979 to 1983, China increased its number of urban exchange lines by 870,000. The average annual growth in this period was three to four times that in the past 30 years. It added more than 9,000 trunk lines during the same period, accounting for 50 percent of the country's total over the past 30 years. The imported 10,000-line program-controlled switching systems have been operational in Fuzhou, capital of Fujian Province, and other cities.

China now has direct postal services with 110 countries and regions, and runs international express mail services from 24 cities. Direct international circuits have been set up with 45 countries and regions through international communications satellites.

CSO: 5500/4148

GEOSYNCHRONOUS SATELLITE, PROSPECTS FOR SATELLITE BROADCASTING

Beijing ZHONGGUO GUANGBO DIANSHI [CHINA RADIO AND TELEVISION] in Chinese No 7, 4 Jul 84, p 38

[Article by Ren Xianlin [0117 4382 7792] and Jiang Cheng [3068 3397]: "Prospects for Development of Satellite Broadcasting, with Reference to the Geosynchronous Satellite"]

[Text] On 8 April China launched an experimental geosynchronous communications satellite which reached its geostationary position at 125° east latitude directly above the equator at 1800 plus hours on 16 April, thus making our country one of the few nations in the world that can independently develop and launch geostationary communications satellites. This constitutes another important victory for China in its space program and marks a new leap forward in our space technology.

A geosynchronous satellite is a satellite which is synchronized above the earth's equator, or a stationary synchronous satellite. It revolves around the earth 35,786 kilometers above the equator in an elliptical synchronous orbit, and the time it takes to complete one revolution around the earth is exactly the same as that of the earth in completing one revolution. That is to say, it revolves synchronously with the earth. From the ground, it looks like a dot fixed at a standstill in the sky. Thus it is called a synchronous satellite.

It is generally known that our country has a vast territory. Its topography is complex. It has plains, highlands, mountains and basins. Speaking from the angle of magnificent mountains and rivers and picturesque landscapes, this is an advantage. However, it brings numerous problems to the construction of a ground-based broadcasting and television transmission network. For this reason, the present scope of broadcasting and television coverage is insufficient. Some localities are unable to see programs transmitted by the Central Television Station. Although some other areas manage to see these programs, the results are not fully satisfactory due to repeated retransmissions. When people learned of the successful launching of the experimental synchronous communications satellite and found out that various nationalities in Urumqi can see programs transmitted by the Central TV Station on the same day, they requested by cable

and mail that the Central TV Station relay its programs throughout the country via the communications satellite. People in the hilly regions, particularly, urgently requested the establishment of ground receiving stations. Such a fervent desire is understandable. However, because of the low power of the communications satellite, each repeater has only 5 to 8 watts. When used in intercontinental communications, its beam can cover only one-third of the earth's surface, about 170 million square kilometers. Moreover, the radio waves received on the ground are extremely weak. The ground station must be equipped with a giant antenna at least 30 meters in diameter plus complex tracking equipment before it can hope to have decent reception. Even when it is used in domestic communications only, and the beam is narrowed to one country or region, an antenna about 10 meters in diameter is still required. Such ground receiving equipment is still fairly expensive at the present time. It can only be used in places where the governments of provinces, autonomous regions, and municipalities directly under the Central Authority are located, and in those few areas (where it is difficult to build microwave lines) with exceptional needs for transmission of telephone calls, telegraphs, broadcasts, and TV programs. It is not now possible to use such a system nationwide. In other words, it is only suitable for distribution of TV programs and transmission of broadcast programs to a limited number of points.

In order to thoroughly solve the problem of nation-wide radio and television program coverage, the best way is to employ a synchronous [direct] broadcast satellite, because such a satellite has some advantages over the communications satellite. Its transmission power is much greater, generally 100 to 200 watts. Moreover, the transmission antenna on the satellite can integrate the beam into a narrow beam aimed accurately at the desired coverage area, and the radio wave is stronger. So, the ground receiving equipment can be made smaller than that for the communications satellite with resultant lower costs.

According to China's national conditions, if we launch a broadcast satellite of medium power and set up a large number of receiving stations equipped with low-power relay transmitters, we will be able to solve the problem of nation-wide radio and television coverage. In all localities throughout the country, as long as people have television sets and radio receivers, they will be able to watch television and listen to broadcasts. During the 7th Five-year Plan period, China plans to launch a medium-power broadcast satellite to transmit one channel of color television and several simultaneous radio programs. Prior to the launching of satellites, the whole country plans to build more than 3,000 small-scale satellite broadcasting ground receiving stations. After the launching of the satellites, several tens of thousands of receiving stations will be built in 7 to 10 years. By that time, every household will be able to watch television and listen to radio broadcasts through the broadcast satellite, and there will be television programs nearly all day long. In addition to newscasts, special topic and cultural programs and educational programs will assume a considerable proportion of the TV time.

BRIEFS

SATELLITE TV BROADCASTING SYSTEM--China expects to put into operation a nationwide satellite television broadcasting system in 3 and 1/2 years. This system will broadcast high-quality color television programs with frequency-modulation stereo. For this purpose, two television satellites will be launched in late 1987 and in 1988 respectively. With the operation of the new system, the Central Television Station will be on the air eight and a half times longer each week than at present. [Text] [OW032144 Shanghai City Service in Mandarin 2300 GMT 30 Jul 84]

QINGHAI BROADCASTING, TELEVISION WORK--Over the past 35 years since the founding of our country, through the hard work of all workers on the broadcasting and television front in Qinghai Province, the province has built a broadcasting station at the provincial level, two broadcasting stations at the intermediate level, and seven transmitting and relay stations. All places can basically receive broadcasts on either medium wave or short wave. According to incomplete statistics, the province now has some 300,000 radio sets of various kinds. The province began television broadcasting in the beginning of the 1970's. Over the past 15 years the province has built 66 television stations and relay stations of various sizes. Some 35 percent of the people in the province can receive television broadcasts. The province now has 120,000 television sets of various kinds. By the end of 1983, all cities, counties, districts, and towns had built wired broadcasting stations. The province has over 7,100 kilometers of wires specially for the purpose of broadcasting and has some 240,000 loudspeakers for broadcasting. The wires specially for broadcasting have been connected to 75 percent of brigades and 62 percent of production teams. [Summary] [Xining Qinghai Provincial Service in Mandarin 1100 GMT 7 Aug 84 HK]

CSO: 5500/4144

TELEPHONE DATA RETRIEVAL NETWORK INAUGURATED

Madras THE HINDU in English 27 Jul 84 p 12

[Text] Madras, July 26--It is now possible for computers located in two different cities in the country to exchange data through the ordinary telephone line, the Telecommunications Department, Tamil Nadu Circle, demonstrated today.

With a small gathering of computer makers and users looking on, Mr U.D.N. Rao, General Manager, Telecommunications, Tamil Nadu Circle, dialled telephone numbers in Pondicherry and Tiruchi which were connected to computers and was able to retrieve the information stored in them.

For many years, business firms have leased out point-to-point circuits from the Posts and Telegraphs Department and have used them to transmit data between computers. The charges for hiring these dedicated channels were high. But with the P & T recently throwing open the conventional telephone lines which it calls the Public Switched Telephone Network for data transmission, Mr Rao noted that data transmission would become cost effective even for the low traffic user.

Telephone subscribers who wish to make use of this facility can get a licence from the Telecommunications Department and connect their data terminals to their telephones through a modern device that translates data into signals fit for transmission through the telephone line.

In a typical set-up, the telephone subscriber will prepare on his video terminal the message he wants to transmit, then dial the telephone connected to the remote data terminal and when the answer comes from the other end, both subscribers will switch on to the data mode and the transmission will be effected.

Enormous data transmitted: An enormous volume of data can be sent in an STD call of two or three minutes according to the department. It is pointed out that if the transmission is done at the suggested maximum speed of 1200 bauds, it will be 24 times as fast as on a conventional telex machine.

Mr Rao said the department was ready to grant licences straightway to those who wished to avail themselves of this facility. The fee would be Rs. 6,000 a year if the subscriber used a modem supplied by the P & T and Rs. 3,000 if they bought their own from private firms.

CSO: 5550/0037

FIRM PLAYS MAJOR ROLE IN TV EXPANSION, RADAR DEVELOPMENT

New Delhi PATRIOT in English 26 Jul 84 p 5

[Article by J. P. Gadkari]

[Text] Bangalore, July 25--Lakhs of TV viewers in the country should be grateful to the Bharat Electronics Limited, BEL, for its major share of contribution in implementing the Central Government's "crash programme" to set up over a hundred TV transmitters throughout the country by the end of October this year, commissioning one transmitter every day.

Doordarshan had placed an order for the supply of 80 TV Receive Only Terminals (TVROs) and 69 Low Power Transmitters from BEL. For the job, the BEL took special steps by internal reorganisation and production planning and is now already one month ahead of its schedule.

BEL has already supplied 64 TVROs out of the 80 and 29 Low Power Transmitters out of the 69 ordered. While delivery of the remaining TVROs will be completed ahead of schedule, the remaining Low Power Transmitters will be delivered as per the schedule. The whole job is to be finished by August this year. This will enable another several lakhs of people all over the country to view the Doordarshan programmes in their homes.

"Apart from this, BEL has been gearing up to undertake programmes for producing colour TV tubes, chairman and managing director of BEL N L Krishnan told visiting newsmen recently.

Mr Krishnan said the equipment at present being supplied to Doordarshan was specially developed, based on orders placed in mid-1983. The exciters for these transmitters which are designed by BEL, were sub-contracted to ECIL and Keltron, the two other public sector electronic equipment undertakings.

Mr Krishnan also disclosed that the company had already supplied 15 High Power Transmitters during the last two years to Doordarshan. Under the present crash plan it is going to supply 13 more such transmitting stations by March 1985.

He said that besides the design, development and manufacture of colour transmitters and TVROs, BEL is helping Doordarshan to change the existing black and

white studios into colour. It has already undertaken the manufacture of some colour TV studio equipment under collaboration.

As far as broadcasting equipment for the All India Radio is concerned, BEL is developing a new version of FM transmitter with stereophonic facilities for which substantial orders are expected in the seventh Plan. It is fully solid-state with power output up to 300 Watts.

Though the Bharat Electronics Limited is helping to spread the TV revolution in the country, it is not just a TV equipment producing company. It is, in fact, regarded as the pioneer of electronics revolution in India. Today it supplies all kinds of electronic gadgets and equipments for the country's defence forces.

Mr Krishnan disclosed that 80 per cent of the BEL production goes for the defence services. While BEL has specialised itself in producing all kinds of radars which are required for use in the Army and Air Force as well as meteorological development and civil aviation, it has been supplying all electronic systems for the navy for use in the Leander class frigate that is produced in the country.

BEL's expertise and knowledge in the field of radars can compete with those of the advanced countries. Recently, it developed a multi-purpose meteorological radar for weather analysis and also an advanced version of it which is known as artymet radar used by the Army. This mobile meteorological station can determine meteorological parameters which are needed for accurate gun firing. BEL has also developed long range air warning radars and medium range air and surface warning radars.

A modern and sophisticated three-D mobile radar using electronic scanning for identification of friend or foe (IFF) has been developed by BEL and supplied to the Army for augmenting the capability of military radars and for surveillance at civilian airports.

It has completed the programme for the development of navigational radars for use in medium-sized warships and boats. These incorporate latest techniques and are comparable in performance and reliability to foreign systems.

The BEL-developed computer-based target simulators to simulate air and surface targets for training radar operators on board the ship are already in the production pipeline. Beisdes this, it is producing two versions of non-directional beacons for the civil aviation department. It is also developing a portable there KW beacon for the Air Force.

In the field of radio communication, BEL has made valuable contribution by manufacturing equipments covering entire frequency spectrums from low frequencies to high and UHF and microwave frequencies. These equipments meet a wide variety of requirements of professional users such as the three wings of defence services, para-military users, P&T, railways and oil companies. The equipments and systems developed and manufactured by BEL is very modern and sophisticated and satisfy the wide variety of needs of these users.

In addition, BEL has undertaken total system design and installation on turn-key basis, of communication systems and networks both on land as well as warships.

It is entering the field of space technology. The BEL-developed and manufactured quality solar cells have been accepted by the ISRO for use in the satellites. The quality and reliability requirements for such cells are much more stringent than terestrial cells.

Originally set up in Bangalore in 1954, BEL in its three decades of existence, has enormously expanded itself. Besides its huge sprawling complex in Bangalore, it has three production units in Ghaziabad, Pune and Machilipatnam. Three more units are in the process of being set up in Panchkula in Haryana, Garhwal in Uttar Pradesh and Taloja in Maharashtra. While the Panchkula and Garhwal units will manufacture electronic equipment, the Taloja unit will produce TV glass shells. A separate space electronics division has been set up in Bangalore to cater to the needs of the Indian Space Research Organisation (SRO).

Mr Krishnan, while pointing out that India was the only one among the developing countries which has been able to develop and manufacture such advanced electronic equipments and systems, it has made significant prophecy. He says "in the coming decades BEL will be a force to reckon with. New vistas are opening up where firms from developed countries have expressed their desire to work with us".

CSO: 5500/0034

BRIEFS

UAE TELEPHONE LINES--A memorandum of understanding has been signed between the Overseas Communication Service (OCS) of India and Emirates Telecommunications Corporation of the United Arab Emirates (UAE) to construct, operate and maintain a submarine telephone cable linking India and the UAE, reports PTI. The memorandum signed recently provides for a submarine cable with a capacity of not less than 1,200 voice grade circuits. [Text] [New Delhi PATRIOT in English 28 Jun 84 p 5]

TELEVISION RELAY CENTER--KARIMNAGAR, July 15 (PTI)--The 62nd low-power TV relay centre in the country was inaugurated here today by the Union minister for energy, Mr. P. Shiv Shankar. About 600,000 people in Karimnagar town and 50 surrounding villages would benefit by the transmitter. The fourth in the state and the first in Telengana region, if would operate on channel five and band three. Speaking on the occasion, Mr. Shiv Shankar said the aim of the government in expanding TV net work in the country was to educate as well as entertain the rural population. [Text] [Bombay THE TIMES OF INDIA in English 16 Jul 84 p 3]

NEW TELEX LINKS--The director general, overseas communications service has notified that fully automatic subscriber dialled telex service has been made available to more countries with immediate effect, reports PTI. The countries include Bolivia, Dominica Island, Guam, Guatemala, Haiti, Honduras, Mariana Island, Niger, Panama, Paraguay, Puerto Rico and Surinam. [Text] [New Delhi PATRIOT in English 17 Jul 84 p 5]

SECOND TELEVISION CHANNEL--CHANDIGARH, July 25--The second channel on Doordarshan will be commissioned on September 15, the Director General of TV, Mr. Harish Khanna, told newsmen here on Wednesday. Programmes on the new channel would be of a two-hour duration, from 7 p.m. and will originate from Delhi, Bombay, Calcutta and Madras. For these centres, the telecast duration on the main channel will also be extended from September 15, he said. Viewers in Delhi, Bombay, Calcutta and Madras would now be able to watch programmes from 6 p.m. to midnight on the main channel. [Text] [Madras THE HINDU in English 26 Jul 84 p 1]

NEW TELEVISION TRANSMITTER--Bhadravathi, July 26 (PTI)--The country's 74th low power television transmitter was inaugurated by the Union Minister of State for Railways C K Jaffer Sherief here yesterday. The transmitter, third in

Karnataka, will serve an area of 2000 sq kms and cover a population of over five lakhs in Bhadravathi, Shimoga, Tarikere, Lakavalli and Hiriyur. A low power TV transmitter will be commissioned on Friday at Vellore in Tamilnadu. The transmitter will serve an area of 2000 sq kms, and will be 76th TV transmitter in the country. It will cover a population of 8.69 lakhs in Vellore and its surrounding areas, of which 5.12 lakhs is rural. Some of the towns expected to get TV coverage from this transmitter are: Visharam, Puttutakku, Ariyur and Pallikondar, according to an official release. [Text] [New Delhi PATRIOT in English 27 Jul 84 p 5]

NEW BHADRAVATHI TELEVISION TRANSMITTER--The country's 74th low power television transmitter was inaugurated by the Union minister of state for railways, Mr C.K. Jaffer Sherief, at Bhadravathi on Wednesday. The transmitter, third in Karnataka, will serve an area of 2,000 sq km and cover a population of over 500,000 in Bhadravathi, Shimoga, Tarikere, Lakavalli and Hiriyur. [Text] [Bombay THE TIMES OF INDIA in English 27 Jul 84 p 20]

NEW DIGITAL EXCHANGE--The Indian Telephone Industries (ITI), Bangalore in association with Telecommunication Research Centre in New Delhi has designed and developed a completely digital exchange called the 'digital integrated local-cum-trunk exchange' with multi-purpose applications, reports PTI. The exchange, a sophisticated common control digital switching system, can work as a local tandem or trunk exchange or any combination. It provides for 64 lines which can be expanded up to 2048 lines. Switching control is accomplished by multi-microprocessor control configuration. Apart from its reliability and easy maintenance, the exchange can be installed quickly. The diagnostic circuits are provided in the system which enable quicker detection of faults, thereby reducing their duration. The exchange provides facilities such as call tracing, called subscriber alert and call waiting. The charges on trunk calls made by every subscriber can be registered and detailed billing of calls for a pre-determined period can also be made. The first such exchange was commissioned recently at Udayamperoor near Ernakulam in Kerala circle. [Text] [New Delhi PATRIOT in English 29 Jul 84 p 5]

SURAT TELEVISION TRANSMITTER--A low power TV transmitter was inaugurated by the Union deputy minister for health and family welfare, Miss Kumudben Joshi, in Surat city and surrounding areas of Rander, Behestan and Katargam. Miss Joshi said six lower power T.V. relay centres and three high power centres would start functioning in Gujarat by the end of 1985. [Text] [Bombay THE TIMES OF INDIA in English 31 Jul 84 p 21]

INDO-USSR SATELLITE COOPERATION--New Delhi, August 1--The Prime Minister said in the Lok Sabha today that India and the Soviet Union had reached an accord in May to co-ordinate their communication-cum-weather satellite network. She said representatives of the telecommunication administrations of the two countries met here from May 21 to 25 to consider all aspects of mutual co-ordination of the Soviet satellite systems and the Indian National Satellite (INSAT) systems of this country. Necessary mutual co-ordination in

terms of geo-stationary orbit locations and frequency bands utilisation was concluded and documented in a memorandum of understanding signed on May 25, the Prime Minister said. [Text] [Bombay THE TIMES OF INDIA in English 2 Aug 84 p 9]

DIGITAL SWITCHING EQUIPMENT--The government has decided to import technology for the manufacture of digital switching equipment, the deputy electronics minister, Dr M.S. Sanjeevi Rao, told the house. He said the government has also given the green signal to the Indian Telephone Industries (ITI) for in-house manufacture of certain types of electronic components. Dr Rao said orders have been placed for the import of about 820,000 colour picture tubes (CPT). Of these, 76,000 CPTs had been distributed to the television industry till July 30. A further 600,000 CPTs will be offered by lifting by the industry up to March 31, 1985. [Text] [Bombay THE TIMES OF INDIA in English 2 Aug 84 p 9]

RAJAMUNDRY TELEVISION TRANSMITTER--New Delhi, Aug 5 (PTI)--The 86th transmitter in the country will be commissioned at Rajamundry in Andhra Pradesh tomorrow. It will be the 11th television transmitter in the state. The transmitter will cover an area of 2,800 sq km. It will cover a population of 9.18 lakhs in Rajamundry and its surrounding areas of which 5.66 lakhs is rural. Some of the towns expected to get television coverage from this transmitter are Kovvur, Malluvaram, Rajanagarant and Kumaradevam. [Text] [Calcutta THE TELEGRAPH in English 6 Aug 84 p 6]

NEW TV TRANSMITTERS--A TV transmitter was commissioned today at Bilaspur in Madhya Pradesh in central India. It is the 88th TV transmitter in the country and the 6th in the state. It will have a range of 22 km and will cover a population of about 500,000--half of them in rural areas. [Text] [BK100429 Delhi General Overseas Service in English 1330 GMT 8 Aug 84 BK] A TV transmitter was commissioned today at Burdwan in west Bengal. It is the 89th TV transmitter in the country. It will have a range of 25 km and will cover a population of about 11 lakhs. [Excerpt] [BK100429 Delhi Domestic Service in English 1530 GMT 9 Aug 84 BK]

NEW TV TRANSMITTERS--The number of TV transmitters in the country has gone up to 75 with the commissioning on 26 July of a transmitter at Bareilly in the northern state of Uttar Pradesh. The Bareilly transmitter will have a range of 2,000 square km and will cover a population of 1.2 million. [Text] [Delhi General Overseas Service in English 1330 GMT 26 Jul 84 BK] A TV transmitter was commissioned today at Vellore in Tamil Nadu. It is the 76th TV transmitter in the country. It will have a range of 2,000 square km and will cover population of 8.5 lakhs. [Excerpt] [Delhi Domestic Service in English 1530 GMT 27 Jul 84 BK] The 77th TV transmitter in the country was inaugurated today at Monghyr in Bihar by the minister of state for food and civil supplies, Mr Bhagwat Jha Azad. It has a range of 2,000 square km and will cover a population of 8.5 lakh. [Text] [Delhi Domestic Service in English 1530 GMT 28 Jul 84 BK] The number of TV transmitters in the country has gone up to 78 with the commissioning today of a transmitter at Surat in the western state of Gujarat. The transmitter will have a range of 2,000 square km and will cover a population of 1.2 million. [Text] [Delhi General Overseas Service in English 1330 GMT 29 Jul 84 BK]

TV TRANSMITTERS 79 THROUGH 87--A TV transmitter was commissioned today at Salem in Tamil Nadu. It is the 79th TV transmitter in the country. It will have a range of 30 [as heard] square km and will cover a population of over 11 lakhs. [Text] [Delhi Domestic Service in English 1530 GMT 30 Jul 84] The 80th TV transmitter in the country was commissioned at Agra on 31 July. It will have a range of 2,000 square km and will cover a population of over 1.5 million. [Excerpt] [Delhi Domestic Service in English 1530 GMT 31 Jul 84] A TV transmitter was commissioned on 1 August at Nasik in Maharashtra by the union deputy minister of communications, Mr V.N. Patil. This is the 81st TV transmitter in the country. It will have a range of 2,000 square km and will cover a population of over 700,000. [Excerpt] [Delhi Domestic Service in English 1530 GMT 1 Aug 84] A TV transmitter was commissioned on 2 August at Warangal. It is the 82d TV transmitter in the country and the 10th in Andhra Pradesh. It will cover an area of 2,000 square km with a population of 650,000. [Excerpt] [Delhi Domestic Service in English 1530 GMT 2 Aug 84] A TV transmitter was commissioned today at Kulu in Himachal Pradesh. It has a range of 1,500 square km and will cover a population of about 85,000. [Text] [Delhi General Overseas Service in English 1330 GMT 3 Aug 84] The 84th TV transmitter in the country was commissioned today at Kharagpur in west Bengal. It will cover an area of 2,000 square km with a population of about 12 lakhs, nearly 9 lakhs of them in the rural areas. [Text] [Delhi General Overseas Service in English 1330 GMT 4 Aug 84] A TV transmitter was commissioned on 5 August at Jhansi. It is the 85th TV transmitter in the country and 11th in Uttar Pradesh. It has a range of 35 km and will cover a population of about 550,000, half of them in rural areas. [Excerpt] [Delhi Domestic Service in English 1530 GMT 5 Aug 84] A TV transmitter was commissioned today at Rajahmundry in Andhra Pradesh. It is the 86th TV transmitter in the country. It will cover an area of 2,800 square kilometers with a population of over 9 lakhs, 5 lakhs of them in rural areas. [Excerpt] [Delhi Domestic Service in English 1530 GMT 6 Aug 84] A TV transmitter was commissioned today at Kurnool in Andhra Pradesh. It is the 87th TV transmitter in the country. It will cover an area of 2,000 square kilometers with a population of 4.32 lakh of which half is in the rural areas. [Excerpt] [Delhi Domestic Service in English 1530 GMT 7 Aug 84]

CSO: 5500/4745

DESSIE TOWN SECURES TELEVISION SERVICE

Addis Ababa THE ETHIOPIAN HERALD in English 12 Aug 84 pp 1, 6

[Text] DESSIE (ENA)--A television transmitter built at a cost of 950,000 birr to transmit programmes from the main studio in Addis Ababa to Dessie and other towns in the area through the microwave system was inaugurated yesterday.

The transmitter was inaugurated by Comrade Feleke Gedle-Giorgis, Minister of Information and National Guidance and COPWE Central Committee member.

Speaking at the ceremony, Comrade Feleke said that the television was set up in accordance with the directives given by Comrade Mengistu Haile-Mariam, Chairman of the PMAC and of COPWE and Commander-in-Chief of the Revolutionary Armed Forces.

Comrade Feleke noted the contributions of the transmitter to the strengthening and hastening of the construction work of the people of the region through the transmission of television programmes.

Further pointing out that the setting up of the transmitter is one of the fruits of the Revolution, Comrade Feleke recalled that prior to the Revolution television served the interests of the few feudal ruling class. He added that following the Revolution, because of the attention paid to mass communications by the Revolutionary Government, the mass media have reached the masses and are, therefore, playing their part in the construction of socialism by helping educate and organise the masses.

The programmes transmitted through the new transmitter will spread to a distance of 80 kilometres from Dessie town, said Comrade Feleke. He added that they would facilitate exchange of experiences and promote mutual understanding.

Comrade Girha Neway, COPWE Central Committee member and the region's WPE First Secretary, said in a statement thatthe transmitter would assist the struggle that the people of the region are waging for the attainment of the objectives of the Revolution.

Comrade Gessesse Abay, Chief Engineer of the Ethiopian Television Department and head of the project, made a statement giving details on the setting up and operation of the transmitter.

Present at the ceremony were Comrade Shimelis Aleum, COPWE Central Committee memger and the regional Chief Administrator, Comrade Lt. Col. Gebre-Giorgis Berhane, COPWE Central Committee Alternate member and the regional Military Commissar, and WPE committee members of Dessie town and its environs.

CSO: 5500/105

BRIEFS

MAKALE TV STATION--MAKALE--A television transmission station built at a cost of nearly 1.2 million birr as part of the Revolutionary Government's ongoing media expansion scheme to provide television service to the broad masses of the country, was inaugurated here yesterday. The new station, which relays the programme of the Ethiopian television from the main studio in Addis Ababa to viewers in Makale and several towns in the area, was declared open by Comrade Feleke Gedle-Giorgis, Minister of Information and National Guidance and COPWE Central Committee member. Comrade Felke noted on the occasion that the project was completed in a short time in line with the directive given by Comrade Mengistu Haile-Mariam, Chairman of the PMAC and of COPWE and Commander-in-Chief of the Revolutionary Armed Forces. He said that the television transmission station was built to enable the masses of Tigray region to follow the efforts being made for socialist construction in Ethiopia by watching television programmes on political, economic and social activities in other parts of the country. In this way, he added, the people of Tigray region would be able to step up their own activities in socialist construction endeavour. Comrade Feleke pointed out that television is an important medium for agitating, organizing, educating, informing and entertaining people and said that the opening of the television transmission station in Tigray region on the eve of the formation of the WPE and the 10th anniversary of the Ethiopian Revolution is a happy and very proud event. [Excerpt] [Addis Ababa THE ETHIOPIAN HERALD in English 5 Aug 84 p 1]

NEW TV TRANSMITTER--The television transmitter station built in Dila Town, Sidamo Region, at a cost of 1,480,000 birr, to relay programs from the main studio in Addis Ababa to various towns in Sidamo Region, was inaugurated and became operational today. The booster station built in the vicinity of Yirgaalem town to give power to the transmitter at Dila town, at a cost of 370,000 birr, was inaugurated yesterday. [Summary] [Addis Ababa Domestic Service in Amharic 1700 GMT 16 Aug 84 EA]

CSO: 5500/104

'BATTLE ROYAL' LOOMS IN FIBER OPTICS INDUSTRY

Johannesburg THE STAR in English 7 Aug 84 p 13M

[Article by Peter Farley]

[Text]

A battle royal is set to take place in the fledgling fibre optics industry, after ATC's reaffirmation of its decision to go it alone with the introduction of a fibre-drawing factory.

Construction of the R6 million factory is under way, and is on schedule to produce the first fibres in mid-November.

Until now all optical fibres used in SA have been imported and coated locally. It will be the second fibre optics factory in the Southern Hemisphere after the recent opening of a similar plant in Australia.

ATC, in which Barlow Rand's Reunert now has a 25 percent stake, announced last year that it was building a fibre drawing facility at Springs.

But negotiations had been taking place within the industry until the last few days in an effort to come up with a compromise which would involve one fibre drawing plant in SA, in which the various local competitors would all have a stake.

Local demand for fibre optic cable is currently around 10 000 km a year, and is estimated to rise to around 25 000 km by the end of this decade. A single fibre drawing plant will have a minimum capacity of 20 000 km.

These talks were, nevertheless, evidently unable to achieve sufficient common ground for a joint project to work.

The main stumbling block as far as ATC and Phillips-controlled Aberdare Cables were concerned was that Altech wanted to control the joint project. There has been no word as to where Aberdare stands on these latest developments.

Now, as in many areas of industry, SA faces another oversupply situation with at least two fibre drawing plants — with a joint capacity of over 50 000 km — due to come on stream in the foreseeable future.

But ATC still faces a stiff uphill battle in fibre optics with the competitiveness of its products a relatively minor worry. Altech controls the turnkey franchise from the Post Office — by far the major user of fibre optics — until the end of 1985.

In addition, Altech has the exclusive Post Office contract for the supply of the hardware and repeater equipment that goes with the cables until the end of 1994.

EQUIPMENT ORDERED

It is therefore no surprise that Altech MD Mr Ken Maude says

that his firm remains committed to establishing a fibre optics drawing plant, but would not say when he expects it to come on stream.

Altech chief executive Mr Bill Venter said in April that Altech would have an optical fibre plant up and running at its Boksburg headquarters by January 1985 at a cost of R8 million.

Mr Maude said yesterday that the equipment for the plant had been ordered a few weeks ago, but that the cost would be below R8 million. He said it would have an initial annual capacity of 30 000 km, but would be expanded if necessary.

He would not, however, detail where the equipment has been ordered from or when the first fibres would be drawn. He added that full details would be issued with the group's interim figures in September.

Ironically the ATC equipment is coming from Standard Telephone and Cables UK (STC UK). Altech owns STC South Africa, after buying control from parent ITT of the US several years ago.

Using imported cables Altech has already installed 21 fibre optics systems for the Post Office, ranging from 7 km to 50 km. It has orders on hand from the Post Office for another 4 000km over the next two years.

Clearly ATC will have to break into the private sector if its plant is to be viable in the early stages. There is a good chance, however, that it may be able to break into the lucrative Post Office business from early 1986.

Altech is obviously intent on trying to renew the turnkey contract which expires at the end of 1985. But the indications are that each project will be put out to open tender on an individual basis once this contract expires.

Certainly if the government is to encourage free-market practices this would seem to be the logical direction now that there will be two local sources of supply.

Both companies, in addition to Aberdare which now seems to have dropped out of the running for fibre optics, could have installed manufacturing capacity long ago.

But all held back due to the rapidly changing technology within the industry. Even at this stage a move could well prove premature. The industry is so young that there are not even established international standards yet in force for the manufacture of fibre optic cables.

CSO: 5500/102

BRIEFS

COLOR TV PLAN--The Director-General of the Ghana Brodcasting Corporation, Mr L.W. Fifi-Hesse, announced yesterday that arrangements had been completed for the BGC-TV to go colour before the end of the year. He said the agreement to this effect would be signed soon, and installation of new studio equipment would begin thereafter. Launching the GBC Golden Jubilee celebration in Accra, Mr Fifi-Hesse said the corporation would soon acquire new transmitters which would improve the quality its transmission. Miss Joyce Ayree, Secretary for Information, said the PNDC was concerned about providing the GBC with the necessary tools to enhance its work and urged the workers to put in a greater effort to raise the standard of the corporation's output. Emphasizing that ill-informed people could not contribute effectively to any development effort, the Secretary charged the corporation to endeavour to keep the people well-informed to enable them to live up to their responsibilities. [Text] [Accra GHANAIAN TIMES in English 1 Aug 84 p 1]

CSO: 5500/102

SATS ORDERS MICRO-PROCESSOR-CONTROLLED SIGNALLING SYSTEM

Johannesburg INDUSTRIAL WEEK in English 31 Jul 84 p 5

[Text]

THE Signalling and Telecommunication Division of Sats has stepped into the forefront of modern microprocessor-controlled signalling technology.

An order exceeding R1-million for an up-to-date digital system known as Solid State Interlocking (SSI) has been placed with the signalling division of GEC SA by Sats. This will be installed and commissioned by May as a pilot scheme at Lenz and will establish the feasibility of SSI SA.

Joint venture

Microprocessors and modern digital techniques have made possible a new generation of signalling systems which, while maintaining high standards of safety, offer greater reliability and significant cost savings.

The system being installed is a joint development between British Rail, GEC General Signal, and Westinghouse Signals. British Rail's first SSI installation at Leamington Spa is due for commissioning early in 1985.

The project seeks to exploit:

- The small size of the microprocessor with subsequent reduction in equipment room building costs.
- The microprocessor's ability to achieve very high integrity with digital techniques.
- Closed loop feedback systems to permit signals and points to be driven directly without interface relays.
- The Solid State Interlocking system costs less than the equivalent relay interlocking system with conventional railway signalling cable.

It almost eliminates the maintenance required for electromechanical relays, and the variety of spare equipment is considerably reduced.

CSO: 5500/102

BUREAUCRACY BLAMED FOR BELTEL PROBLEMS

Johannesburg SUNDAY TIMES in English 22 Jul 84 p 5

[Text]

BELTEL, the SA Post Office-controlled videotex electronic information system, has come to a virtual standstill — and bureaucracy is blamed.

Beltel equipment suppliers, information providers (IPs) and corporate users complain that Sapo is killing the market by not allowing indefinite use of the British Prestel-based system. Sapo is committed to the more complex European Cept system, but because of technical problems terminals are unavailable at reasonable prices.

Suppliers say Sapo should allow Prestel equipment to be used in parallel with Cept for a minimum of five years. But Sapo wants Prestel equipment to be scrapped — except for restricted use — next year.

Out of sight

There is still no sign of the Cept equipment — said to be due in September or October — and doubts have been expressed about whether the price will be right.

Neil Fraser, technical manager of AEI-Henley, a terminal supplier, says: "As far as Beltel goes, Sapo is cutting its own throat — if it hasn't done so already."

But John Swart, an engineer at Beltel, counters: "By the end of the year there will probably be more terminals on the market than we'll know what to do with."

Many parties keen to exploit the potential of the system, whereby information can be viewed and transactions conducted with inexpensive terminals connected to the telephone network, claim Sapo is bungling the system's marketing and imposing unnecessary restrictions and rules.

Afrikaans

Cept was chosen in preference to Prestel because of its claimed superior graphics capabilities and its ability to reproduce Afrikaans accents.

But Cept has failed to come up to expectations. It is not even in use in Germany where it was developed. It is beset by technical difficulties in developing a chip — the key to bringing down the cost of the user terminal.

Despondent

South Africa has consequently been forced to postpone the launch of Beltel.

Videotex systems based on other standards — notably Prestel and the NAPLPS system of North America — have moved ahead fast.

This has caused a ridiculous state of affairs — terminals which are low-priced and officially acceptable are unavailable. Consequently there has been no growth in the number of users and suppliers have virtually no market. With a minimal number of users, IPs are despondent.

Although Beltel is in its market test phase, there are said to be fewer than 500 terminals in use and the number

of IPs is shrinking.

Market base

Mike Mortimer, a videotex consultant, says: "If the Post Office agreed to support Prestel for a minimum of five years it would have a market base of 15 000 to 20 000 users within six months."

Johan van Wermeskerken, a marketing consultant with Ambit Business Services which supplies software for private videotex systems, says the limitation on Prestel-based systems also applies to private systems as these have to operate through the Post Office's Cept-based Beltel computer.

Peter van der Merwe, rental accounts manager of Visionhire, a rental company, says a minimum of three years is required to rent terminals. With Prestel-based terminals due to be phased out next year it is not feasible to hold stock for rent or even for lease.

Adequate

Nigel Wigram, marketing services manager for Old Mutual, which wants its brokers and salesmen to use terminals, says: "Prestel-type terminals are adequate because they handle 95% of what we want to do. Cept units at an acceptable price are not available."

The Post Office's Mr Swart is confident that Cept chip bugs which have delayed its release will be eliminated. He says reasonably priced Cept terminals will be available in SA before the end of the year.

Among the main reasons Sapo insists on Cept is that it is said to have a greater security level than Prestel and an automatic error correction feature for checking data during transmission.

CSO: 5500/102

BRIEFS

SABC EDUCATIONAL TELEVISION SERVICE--The chairman of the South African Broadcasting Corporation, SABC, Professor Wynand Mouton, says the corporation has already established a division for educational television. Professor Mouton was addressing the joint council for natural science associations at the University of South Africa. He said the planning was being undertaken in close cooperation with the various educational authorities and good progress had already been made with programs for the various sections of education. Professor Mouton said various problems, especially in the financial areas, still had to be solved before educational television could become a reality. [Text] [MB091019 Johannesburg Domestic Service in English 0500 GMT 9 Aug 84]

OFFICIALS DISCUSS MEDIA ROLE--The deputy minister of foreign affairs, Mr Louis Nel, has said in Pretoria that it has never been the government's aim to curtail the role of the media as a contributor to a healthy national policy. Addressing a seminar of the South African Institute of Public Relations, Mr Nel said no government could act in the best interests of a country without a healthy and vigilant media core. He said the prime minister regarded the media as crucial factor in the exchange of correct information between the government and the people, and vice versa. Mr Nel said the government had a duty towards the public not to hide anything, and that this was why the media formed an important channel of information as long as the normal rules of confidence and the security of the state were respected. The deputy minister made it clear that in cases where the public had the apparent right to be informed, no government should withhold such information. The director general of the South African Broadcasting Corporation, [SABC] Mr Riaan Eksteen, said at the seminar that he was concerned about large amoutns of criticism levelled lately at the corporation. Mr Eksteen said although an organization such as the SABC welcomed criticism, he had to point out that most of the latest criticism had not been based on facts. He said the press, and political parties in particular, levelled criticism for the sake of criticism without making sure of the facts. He said the SABC's Department of Public Relations hopes to make available all possible information so that there could be no confusion or distortion of the facts. [Text] [MB091600 Johannesburg Domestic Service in English 1115 GMT 9 Aug 84]

CSO: 5500/101

NEW SATELLITE COMMUNICATIONS SYSTEM PROVING ITSELF

Moscow RADIO in Russian No 4, Apr 84 pp 4-5

[Article by A. Grif: "Space and the Sea."]

[Text] The telephone rang at the editor's desk. The clear voice of the caller resounded in the speaker.

"Is this the magazine RADIO? Hello! This is the chief of the radio station of the motorship Mikhail Kalinin Evgeniy Kudryavtsev speaking. I am sending greetings to the readers of the magazine and to its editorial staff...."

"Thank you. Where are you located?"

"We are passing through the Bay of Biscay heading out into the Atlantic. We ran into a cyclone; it's storming heavily...."

"How do you hear us? We are reading you, as ham radio operators say, at 59 with a big plus."

"The quality of the communication is excellent. If it were not for some hardly noticeable fading, it would be impossible to differentiate our conversation from an ordinary one that one might have on a city telephone system. The Soviet ship station Volna-S of the satellite communication system has recommended itself excellently under difficult conditions."

"And the storm does not bother it?"

"Our experience despite the fact that it is still limited shows that there are no hindrances, neither weather related nor ionispheric.

The ship is now rolling heavily. At times the waves are reaching 12 meters. However, the antenna Volna-S is tightly holding on to the statellite located over the Atlantic."

The magazine RADIO has already told about the formation of the International Organization of Sea Satellite Communications--Inmarsat. Just recently 2 years past since the organization entered into commercial use a satellite system of communication, and our little interview through space is sort of an illustration of its possibilities.

What is Inmarsat today?

"At present 40 countries are members--practically all the sea powers," related the chairman of the All-Union Association Morsvyaz'sputnik, and the chairman of the Inmarsat council Yuriy Sergeevich Atserov. "The Soviet Union, taking into consideration the international character of maritime shipping, was one of the promoters of the formation of such a system of space communication. It is difficult to overestimate its importance--on any day there are more than 25,000 ships at sea, about 1 million seamen."

In practical terms the possibilities of Inmarsat are vast. Even today it serves 2,200 ships.

Every year more and more ships sailing under our flag receive apparatus permitting operations through space. Both experience and the evaluations of experts speak to the meaning of a speeded up introduction of satellite communication at sea. By just raising the effectiveness of the fleet management, up to 3 percent of ship travel time could be saved.

Today Inmarsat can be called with full justification a global communication system. The working area of the world's oceans covered by Inmarsat runs from 75° south latitude to 75° north latitude.

The Inmarsat system is based on the use of geostationary satellites located 36,000 kilometers above the earth. Their "parking" spots are located over three oceans. Over the Atlantic Ocean two IS3's are located: one in use with 40 channels and a "parking spot" at 26° west longitude, and one in reserve at 18.5° west latitude with a maritime sub-system capacity of 30 channels. There are two satellites with maritime sub-systems of 30 channel capacity each over the Indian Ocean. The coordinate of one is 63° east longitude, and of the other, 60° east longitude. As yet there is only one IS3 over the Pacific Ocean. Its "parking spot" is 177.5 ° east longitude. It provides only 10 channels which is clearly not enough. Therefore, towards the end of 1984 the launch of another IS3 is planned.

The Inmarsat system permits ships to establish automated telephone, telegraphy and phototelegraphy communication with any system subscriber in any country. For example, all our friend the radio operator on the Mikhail Kalinin has to do is to dial the appropriate command on the control panel in order to bring into operation Volna-S. Its electronic unit, which contains a micro-processor, a synthesizer of frequencies, a modem, amplifiers and other modern equipment, will find a free communications channel, place the station in the necessary mode and prepare conditions for the transmission of the message. The reception of a radiogram from on shore can be accomplished paractically without the involvement of an operator--the telegraph apparatus, the equipment for transmitting data and the facimile unit will lock in the addressed message into the automatic mode.

The antenna station with its parabolic antenna, diameter--1.2 meters, is an important element of the ship's station. The width of its directional pattern is 10°. The antenna has biaxial systems of stabilization and beam guidance to the satellite.

The ship's station operates for transmission in the frequency range 1636.5... 1645.0, and for reception, 1535.5...1545.0 megahertz (MHz). The analogue channel is FM, the digital, OFT. This permits the utilization of telex channels for the transmission of data at a speed of 2.3 bits/sec. Experiments have been conducted and the possibility of transmitting up to 56 Kbits/sec of data has been shown.

This by no means exhausts the possibilities of a satellite communications system. Work is being done both here in the USSR and abroad to perfect shipboard stations. For example, soon stations with display equipment will appear on ships. A radiogram text will be projected on a display screen, entered into memory by means of a keyboard, corrected if necessary and only then dispatched to the addressee. Displays have been built which are capable of memorizing five 300-word messages.

Specialists are working on reducing the size of the antenna station and also on apparatus miniaturization. This will permit the utilization of shipboard stations on smaller ships of less than 5,000 tons. This is the way the new generation station Standart-B is being developed (in contrast to the existing Standart-A to which Volna-S relates); it will be very compact. It suffices to say that the diameter of its antenna will not exceed 40 cm, and the power of its output stage will be approximately 30-40 watts. Most importantly, however, it will accommodate data transmission at a speed of 16 Kbits/sec.

A satellite system will also open other possibilities: upon request a shore service information important for it will be transmitted automatically: a so-called mechanical report (information from gauges monitoring of operation of machines and apparatus on board ship) and navigational information.

How are the land operations of Inmarsat organized? Today Inmarsat has eight land stations. Three of them serve to distribute among the other land stations of a given region telephone channels. This function for the Atlantic region is performed by the station in Southbury, U.S.A., for the Indian Ocean by the station in Yamaguchi, Japan, and for the Pacific by the station in Ibaraka, Japan.

Telegraph channels can be distributed among ships by region by stations in Norway (serves the Indian Ocean), in Kuwait (the Atlantic) in France (the Indian and Atlantic oceans) and in the U.S.A. (the Atlantic and Pacific oceans).

Recently a land station near Odessa went into operation. It raised its 13-meter antenna bowls on the shore of Khadzhibeevsky Bay. One of them works wih with the IS3 Mareks-A, located over the Atlantic Ocean; another is directed at Intelsat V which hangs over the Indian Ocean. The station is already hooked into domstic and international communications lines. Through the Odessa station and the station being built in Nakhodka (intended for work with satellites over the Pacific and Indian oceans) telephone, telegraph, telex and facimile communication of our ships with their assigned ports and any other correspondents will be accomplished.

The harsh nature of ocean conditions has caused the formation of still another space system for maritime service. It has now become known by the name KOSPAS-SARSAT. It was created by the USSR, U.S.A., France and Canada. KOSPAS (Space System for the Search for Distressed Ships), the Soviet part of the project and SARSAT (Search and Rescue--Satellite Aided), the other participants part of the project.

On 30 March 1982, when TASS published a report about the launch of Kosmos-1383, one in a series, on board which was installed radio apparatus for determining the location of ships and planes in trouble, scarcely anyone was able to evaluate fully the role and importance of the new system. And then on 10 September 1982 when Kosmos-1383, called in the Canadian press KOSPAS-1, for the first time received and transmitted to an information reception point a distress signal and people were saved, KOSPAS-SARSAT started to be talked about.

Now the space system is credited with saving more than 150 lives. To date England, Austria, Argentina, Bulgaria, Brazil, Finland--more than 20 countries in all-have expressed the desire to cooperate in its operation.

Now the "construction of the system" on land and in space is being completed. The first Soviet rescue satellite was joined on 24 March 1983 by a second-Kosmos-1447, and on 28 March the first American IS3 NOAA-8 went into orbit. Our Kosmos satellites go around the earth in circular orbit at a distance from earth of 1,000 kilometers with an orbital time of 105 minutes and an orbital inclination of 83°. The parameters of the American IS3 are approximately the same.

Distress radio buoys, (ARB) with which ships and planes are equipped, are one of the basic and most comon elements of the system. They turn on their transmitters and begin to operate in case of distress, emitting radio signals on frequencies of 406 and 121.5 MHz. Satellites passing by receive these signals.

Radio buoys ARB-121.5 (today they number up to 300,000) send out into the air an unmodulated signal. However, even such a signal suffices, so that with the help of the onboard satellite apparatus the radio buoy coordinates can be determined within a margin of 20 kilometers according to a Doppler frequency shift. This is completely satisfactory because the radio direction finding facilities which searching planes and ships possess are able "to hear" transmitter ARB-121.5 at distances up to 30 kilometers.

The complexity of the rescue utilizing the ARB-121.5 lies elsewhere. This band because of the undisciplined nature of radio operations is often used by land transmitters, and as a result, according to American specialists, up to 90-95 percent of the distress signals which come through IS3 KOSPAS-SARSAT from U.S. territory turn out to be false.

The radio buoy ARB-406 is a more complete device. It is equipped with two transmitters. One of them operates on a frequency of 406 MHz and serves for communication with satellites (its power is on the order of 5 watts).

The second is radiodrive transmitter that emits a singla for radio direction finders on a frequency of 121.5 MHz. In the ARB-406 there is a memory device into which it is possible to enter basic information: the name of the ship, its country, coordinates and the type of accident. This summary about the misfortune goes via the space bridge to the information reception points (PPI), and then from there to the system coordination center of KOSPAS-CARSAT.

At present there are three national coordination centers in the USSR, U.S.A and France. In addition, there are nine information reception points (three Soviet, three American, one Canadian, one French and one Norwegian).

Here is a brief outline of how the Soviet part of the space rescue service is organized.

In Moscow, Archangel and Vladivostok PPI's are deployed, equipped with domestically produced equipment and intended to receive information from satellites on a frequency of 1544.5 MHz. The construction of a fourth PPI in Novosibirsk is envisioned. All these points are connected by communication channels with the coodination center KOSPAS. The center is located in Moscow at the Main Computer Center and Central Communications Exchange of the USSR Ministry of the Maritime Fleet. Its functions include the final processing of data transmitted to the center for PPI and the notification of our search-rescue services and those of other countries about ships and planes that are in distress. The center does yet another job. It computes data on the flights of Kosmos satellites through zones of PPI radio range.

...The scene is the equipment room of the Moscow information reception point at Teplyy Stan. The time of a satellite to enter the PPI operation zone is nearing approaching. This zone takes in an area with a radius of 2,500 kilometers. A light signal just flashed in the bay for the automatic operation of the antenna and right away the small parabolic antenna (diameter, 1.2 meters) mounted on a metal tower turned to the direction of entry of the IS3 into the Moscow zone and went into the tracking mode. The reception of information from space has begun and the built in computer printing device has begun to operate. Numbers have begun to appear on the broad tape; they denote the ARB-406 code, the coordinates of the ship, its name, its country.... Communications are received from Canada, France, and U.S.A., and even from the Middle East and from beyond the Arctic circle.

But this is only an experimental data transmission. These are the final tests of the KOSPAS-SARSAT system as it corresponds to its general program; it is an evaluation of its possibilities. These tests are conducted in various regions of the world's oceans from the Arctic to Antarctica.

Last October, for example, tests were successfully done in the Black Sea. A distress buoy working on a frequency of 406 MHz was thrown from a ship. Both our and American satellites picked up its signals. While flying over the PPI's in Moscow and Toulouse they sent information back to earth. In a few minutes the PPI's and centers processed the messages, gave coordinates of the location of the operation of the distress buoy to the search-rescue service. A helicopter flew out into the region and "those in distress" were found. The whole operation took less than 1 hour.

Testing of the KOSPAS system has been done even in the Pamir region. Some planes made a "forced landing" in the mountains, and sent distress signals from a wooded area and from deep ravines. Satellites flying over the area discovered without fail "those in distress."

Experts and specialists are convinced the system KOSPAS-SARSAT has proven its viability.

8750
CSO: 5500/1013

'EKRAN' AND 'MOLNIYA-1' SATELLITES IN FLIGHT

Moscow SEL'SKAYA ZHIZN' in Russian 18 Mar 84 p 1

[Text] The launching of the next "Ekran" television broadcasting satellite with on-board relay apparatus ensuring transmission of Central Television programs in the decimeter wavelength range to the network of communal receivers took place in the Soviet Union on 16 March 1984.

The apparatus carried on the "Ekran" satellite is operating normally. The command-measurement complex is monitoring the satellite. The operation of the satellite television apparatus will be carried out in accordance with the planned program.

The launching of the next "Molniya-1" communication satellite took place in the Soviet Union on 17 March 1984. The "Molniya-1" communication satellite is intended for ensuring operation of the system for distant telephonic-telegraphic radio communication, as well as the transmission of USSR Central Television programs to stations in the "Orbita" network.

The satellites were put into a highly elliptical orbit with an apogee of 40,579 kilometers in the northern hemisphere and with a perigee of 646 kilometers in the southern hemisphere. The period of satellite revolution is 12 hours 15 minutes; the orbital inclination is 62.9°.

5303
CSO: 5500/1019

NORDIC COUNCIL TO PRESENT PLAN FOR SHARING OF TELE-X CHANNELS

Oslo AFTENPOSTEN in Norwegian 2 Aug 84 p 4

[Article by Oystein Grue: "Tele-X With Four Channels: Joint Nordic TV Satellite in 1987?"]

[Text] During the course of the year, the Nordic Council will make a decision on whether there will be cooperative efforts for a Nordic television satellite. The group, which has considered program cooperation in connection with the Nordic Tele-X satellite, has now presented a recommendation on how the four television channels can be utilized. According to the plan, Tele-X is to be put in orbit in 1987. As early as next year, television viewers in West Germany, France and England who have their own disk antennas will be able to receive programs from three TV satellites which are to be launched during the course of 1985-86.

The recommendation from the Nordic television group is based on the idea that Sweden and Finland each would send their programs on their respective channel to the rest of Scandinavia, while Norway and Iceland would share a third channel. Since the Tele-X satellite has four channels, the study group has made several proposals concerning how that fourth channel may be used. The groups has not taken a position on any particular recommendation, but mentions four alternatives. One possible solution would be for Iceland to operate the fourth channel alone, while a second proposal would be for Norway, Iceland and Sweden jointly to operate a Nordic channel. The third alternative would be for pay TV for Nordic programs, with the fourth possibility being to rent the channel for projects in each individual country. For example, Norway could use this channel for a new TV-2. To provide an idea of the costs involved, a common Nordic channel with programs specially prepared for satellite transmission would cost about 500 million kroner. This is about half of what it would cost to produce programs for two Swedish television channels.

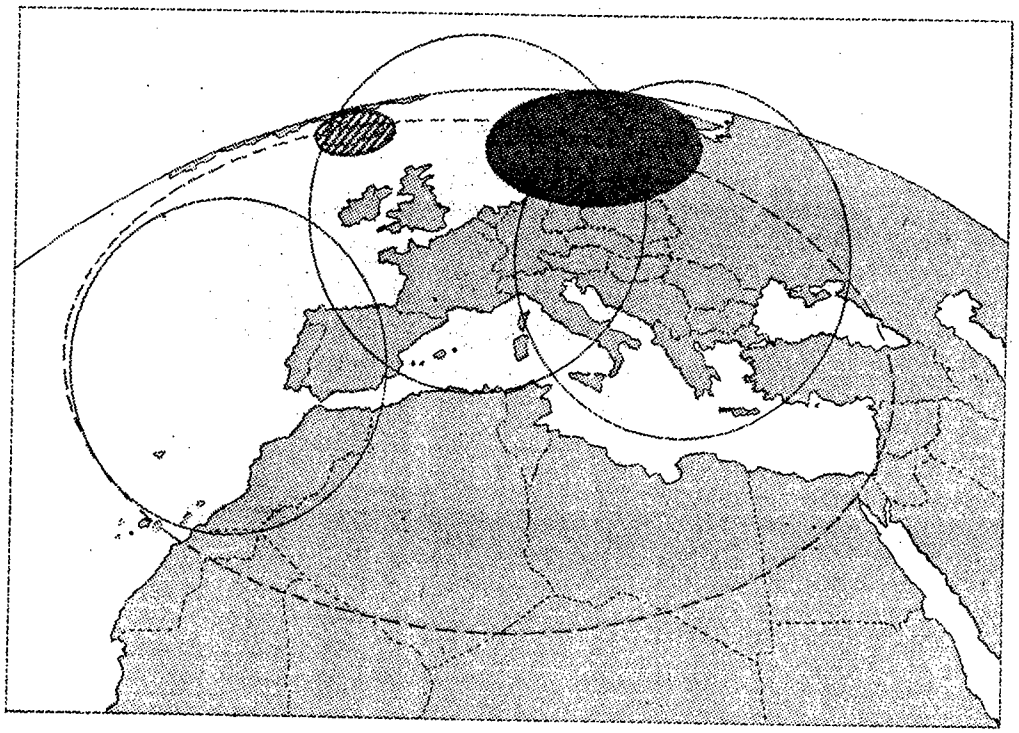
Helge Senneland, the project leader for Nordic TV cooperation, is optimistic and believes that there are good possibilities for achieving Nordic cooperation on a television satellite. He said the following on NRK-DAGSNYTT:

"During the course of this fall, the four countries which have participated in the study phase will discuss whether it is possible to establish a Nordic

television satellite system. From these discussions, it will become clear whether there will be three channels or four, as well as the manner in which the channels should be utilized. I personally believe that there will be four Nordic channels within a few years."

According to the plan, West Germany, Franc and England will launch three national television satellites--respectively, TV-SAT 1, TDS-1 and UNI-SAT--during the course of 1985-86. In contrast to the 15-20 communication satellites (point satellites) which also broadcast television programs in Scandinavia, the new direct transmission television satellites will use separate stronger signals. This will make it possible to use relatively small, simple disk antennas for receiving programs transmitted by satellite. Leif Holmen, the director of the Swedish electronics firm, Vaccuum Service, told AFTENPOSTEN that the newly-developed "people's antenna" specifically is calculated to be used in the West German, French and English markets. Tele-X, and possible a later NORSAT, will make the same television possibilities available in Scandinavia.

Holmen belives that satellite television will be financed through advertising. "In that manner, program expenses and the current coding of transmissions will be eliminated. In the course of five years, disk antennas will become a commonplace," says the Swedish director, who adds the Vaccuum Service is aiming at producing 2 million antennas this year in order to meet the expected demand upon the arrival of the TV satellites. Odd Gutteberg, a researcher with the Telecommunication Research Institute in Kjeller makes clear that the European television satellites will have a limited area of coverage.



"Initially they will be able to cover only the individual country from which they are launched. However, it will be possible with a larger entenna screen to be able to receive West German, English and even French satellite TV programs conditioned only on acquiring sufficiently large disk screens," Guttenberg Told AFTENPOSTEN.

The inset shows how Europe looks from a satellite perspective. The outermost broken-line circle shows the coverage area of a possible future EUTELSAT system. The Tele-X satellite would cover the dark area; Iceland also could be covered by the satellite.

12578
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TELEDATA SYSTEM STRUGGLING TO REMAIN VIABLE

Copenhagen BERLINGSKE TIDENDE in Danish 18 Jun 84 X Sect III p 5

[Article by Karin Kaas: "24,000 Fewer TELEDATA Images Since 1 April"]

> [Text] When the TELEDATA trial went over to commercial operation on 1 April it at the same time meant that information providers now had to pay for each image they put in. This prompted a number of providers servicing private consumers to say goodbye and thanks to the system. TELEDATA is now negotiating with three large organizations to take charge of their data bases.

TELEDATA users have 24,000 fewer images at their disposal since the experiment on 1 April went into commercial operation and the information providers therefore have to pay for each image they put in. At the beginning of the year there were 65,000 images on TELEDATA, but on 1 April the number had fallen to 41,000 and has stayed at that level since then.

At the same time one of the external data bases disappeared from the system. This was the case of the data center's legal data base, DC-JURA, which had been available through TELEDATA for a year. The external data bases that are back--meaning a firm or an organization which makes its data base available to external users--are today those of the Handelsbank and the Telecommunication Agency's directory assistance.

During TELEDATA's experimental phase, before 1 April, information providers could store images without charge with TELEDATA, for which they now have to pay 200 kroner a year per image, for those providers who put in 0-100 images. In addition, there is a charge for setting up an account and a quarterly fee of 2,000 and 1,000 kroner respectively.

Sales Manager Borge Gormsen, TELEDATA, tells BERLINGSKE that he is not surprised that the number of images were reduced by 24,000 when the experiment went into commercial operation.

Private Consumers Will Come

TELEDATA's market strategy is to focus on the business sector--at least for a number of years. Only when the number of images is sufficiently large

will private consumers be included as well. Therefore it is understandable that information providers primarily catering to private consumers--like IRMA for example--have been squeezed out. They have learned from the experiment that time is not ripe yet," he says.

Information Clearance

However, there are also a number of information providers who cater to business consumers who have cleared out their information at the same time they were about to have to pay for each single image, the sales manager for TELEDATA explains.

He adds that the future for TELEDATA does not lie in storing images, but in setting up data bases--or parts of them--for information providers for external users, in the same manner that Handelsbanken, Directory assistance--and until 1 April--the data processing center have done.

Technical Reasons

The data processing center explains that the reasons for squeezing DC-JURA out of the system primarily lie in the technical field. It was rather complicated to get DC-JURA via TELEDATA while there are no problems when DC-JURA is used as a "general" data base, i.e. users get the information from the data center's legal data base through their own processing equipment or personal computer.

The data processing center does not want to reject the idea that DC-JURA again could be offered via TELEDATA, but it would call for another technical solution. Moreover, it is stressed that the data processing center will continue to be the normal information provider for TELEDATA.

Borge Gormsen further explains that TELEDATA at this time is conducting negotiations with three large organizations who are considering placing their data bases at the disposal of TELEDATA consumers.

9349
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COUNTRY EXPECTS TO RECEIVE NORWEGIAN TV FROM EUTELSAT 1-F1

Copenhagen BERLINGSKE TIDENDE in Danish 13 Jul 84 p 5

[Article by Michael Rastrup Smith: "Iceland Receives TV From Norwegian Satellite"]

> [Text] Norway gets its own satellite channel when a joint European satellite is launched in the beginning of August and then Iceland, the oil platforms in the Norwegian part of the North Sea and Svalbard, will get Norwegian TV.

Norway will become the first Scandinavian country to transmit TV via satellite.

On 4 August the European satellite organization, EUTELSAT, launches a new satellite, EUTELSAT 1-F2 positioned over the Equator. The satellite has nine channels, one of which is leased by Norway.

"Among other things, Norway wants to use her channel to transmit current Norwegian programs on TV to Svalbard and to the oil platforms in the North Sea," says Undersecretary of State of the Norwegian Ministry of Culture Gunnar Magnus.

But Svalbard and the North Sea are not the only places to be covered by Norwegian TV-programs. Iceland has submitted an application to Norway for permission to receive the program. At the moment the Norwegians are in the process of solving basic legal questions so that the Icelanders can get linked by TV to the rest of the Nordic countries.

The satellite Norway will transmit from it a sister-satellite to the ECS-I satellite, now renamed EUTELSAT 1-F1. This satellite has already been the subject of much attention because it sends a number of TV-programs to all of Europe. These programs are received--among other countries--in Norway, Sweden and Finland.

The new satellite from EUTELSAT--an organization of which Denmark also is a member--will also send TV-programs to the European Broadcasting Union (EBU), in addition to the Norwegian programs. The European TV stations exchange a number of TV-programs on a daily basis via EBU, which gets two channels on EUTELSAT 1-F2.

Beyond TV-programs there will also be channels for commercial communications where businesses can exchange information with one another. When EUTELSAT 1-F2 is in place, Europe will be the first part of the world to have its own regional telecommunications system via satellites.

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NORWEGIAN TECHNOLOGY STRESSED IN GOVERNMENT-WIDE COMPUTER NET

Oslo ARBEIDERBLADET in Norwegian 31 Jul 84 p 7

[Article: "New Government Computer"]

[Text] During the next 3 years the Norwegian Directorate of Operating Efficiency will develop a data processing package tailor-made for our public administration institutions. Some of these future users of the system are now involved in developing the package.

These include the Social Security Administration, NSB (Norwegian State Railways), the Norwegian Postal Service, NRK (Norwegian Broadcasting Corp), and NORAD (Norwegian Directorate for Development Aid). The two Norwegian companies Mycron and Norsk Data are competing for the job of delivering the necessary hardware and software.

"The Industry Ministry allocated funds for the project with the express purpose of assisting our industry by including Norwegian technology. As a result, Norwegian companies will be able to develop systems for which there otherwise would be no market in this country," director Kare Floisand told NTB (NORSK TELEGRAMBYRA) in his remarks on the project. Financing of the entire package of 22 million kroner will be divided three ways. The computer companies, the government agencies, and the directorate will each contribute 2.5 million kroner annually.

The goal is to create a joint program package for tasks such as wage and personnel administration, text processing, budgeting, and filing.

9336
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AGENCY BUYING EDP EQUIPMENT FROM IBM, NORSK DATA

Oslo AFTENPOSTEN in Norwegian 9 Aug 84 p 29

[Article by Truls Martinsen]

[Text] Norsk Data and IBM will both supply computer hardware and software to continue the efficiency drive at the Telecommunications Service during the next 5 years. Yesterday, the Telecommunications Service board authorized the management of the agency to enter into general agreements with the manufacturers. How the contracts will be divided between them has not yet been decided.

The stage is set for continued competition between the two companies for about 20 contracts with the smaller telecommunications regions. But IBM has landed the most attractive contracts for large-scale machinery to be manufactured for the largest telecommunications regions.

As expected, the agency approved bids from Norsk Data for hardware and software for office automation at the Telecommunications Service, as well as equipment and programs for the agency's technical EDP systems. In the past, Norsk Data has had major contracts with the Telecommunications Service in this area.

IBM will deliver EDP equipment for administrative data processing in the largest telecommunications regions, i.e. Oslo, Bergen, Trondheim, Stavanger, and perhaps in several of the other larger regions. It was expected that IBM would be given these contracts. The Telecommunications Service went over to IBM several years ago when the agency had to void its contract with UNIVAC. "The board chose to continue with IBM in order to guarantee the continued success of the efficiency campaign now underway at the Telecommunications Service," chairman of the board Egil Abrahamsen told AFTENPOSTEN.

In other words, the board does not want to take any chances. The planned efficiency campaign will be carried out in a relatively short time. The new computer systems will be installed in all 28 of the country's telecommunications regions within a period of 2 to 3 years.

Third Manufacturer

General agreements will also be reached with a third manufacturer. Scand Systems will supply the systems development program for the IBM equipment. Scand Systems handles software from the Cullinet Company of the United States, which has produced software for IBM for many years.

How much the Telecommunications Service must pay for the further development of its EDP system will depend on further negotiations. It is estimated that the entire package, including sales to the smaller telecommunications regions, will cost almost 250 million kroner. Thus, this will be one of the biggest computer deals ever involving Norwegian government agencies. Only the order from the Social Security Administration was larger.

So far, IBM has landed contracts for the financial management of the Telecommunications Service's largest regions. The system will keep tabs on telephone bills, material inventories, and other items. Contracts going to Norsk Data involve primarily equipment for text processing, record-keeping, and similar tasks.

Satisfied

Director Eyolf Haug of IBM Norge made no secret of the fact that his company landed most of the contracts it was interested in, even though IBM submitted bids on the entire package. Nevertheless, he said he was looking forward to competing with Norsk Data for administrative systems contracts with the other telecommunications regions.

Norsk Data felt sure all along that it would be granted the contracts it now has received. In the next round of competition, the individual telecommunications regions will play a decisive role in choosing which system will be used in that region. Rolf Skar of Norsk Data is confident that his company will receive a large share of the orders from the smaller regions. "If the consumers had been permitted to decide, we probably would have delivered the administrative systems to the larger telecommunications regions, as well," he said.

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FIRM'S SATELLITE TV ANTENNA MAY MAKE CABLE PLANS OBSOLETE

Oslo AFTENPOSTEN in Norwegian 1 Aug 84 p 4

[Article by Oystein Grue: "Can New Satellite Antenna Ruin Cable TV Market?"]

[Text] Is the cable TV adventure over before it has begun? Leif Holmen, the director of the firm, Vakuumservice in Stockholm, thinks so, due to the fact that the Swedish firm has developed a "people's antenna"--a so-called disk antenna which makes it possible to receive television programs from the 15-20 satellites which are available for Scandinavian television viewers. The antenna would not cost more than about 3,000 kroner.

New effective transistors--together with revolutionary developments in microwave technology--have made it possible for an electronics firm in Goteborg to produce the TV disk antennas for such a low price. Director Holmen told NTB, however, that the price is conditioned on a sufficiently large sales volume. The antenna is especially well-suited for receiving transmissions from satellites such as ECS 3, Tele-X and the future DBS satellites.

Tom Lauten, the director of Hedemark Cable TV in Elverum, does not view the new "people's antenna" as a threat. He totally rejects the idea that the cable adventure is finished before it has begun.

"One cannot compare Swedish with Norwegian conditions, in that the Swedes have not yet commenced construction of a cable network except for a couple of small facilities," Lauten told NTB. Lauten concedes, however, that the disk antenna in the future may be a goal in thinly-populated areas where it is not economically feasible to lay cables. The expansion of the cable network in Norway also is designed not only for television programs, but other services as well. Two-way communications are possible with a cable network--something which is not possible via satellite. The extent to which these possibilities should be utilized is a political matter.

Projection planner Jan Henrik Nyheim estimates that the development of wireless transmission gradually will become competitive with cable-laying. "We in Norway have become extremely involved with systems based on wires. The progress which has been made in the development of wireless transmission results in our being at the beginning of a renaissance in this field. In my

opinion, the possibilities and politicians are in danger of tying themselves to yesterday's solutions instead of concentrating on how the most possibilities--as quickly and as cheaply as possible--can be made available for television opportunities--which practically speaking, already are available by means of satellites," Nyheim states. He is afraid that the telecommunications report which will provide guidelines for the future cable TV and telecommunications development in Norway will be obsolete before Parliament considers the matter in the spring of 1985.

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